

WHAT IS CLAIMED IS:

5 Sub A) 1. A method of determining a profile of a user based on statistical data and psycho-demographic information about the user, the method comprising the steps of:

collecting data about user selections;

iteratively integrating the collected selections data with the statistical data and the psycho-demographic information about the user; and

10 inferring the profile of the user from the integrated information.

15 2. The method of claim 1 wherein, the step of inferring the profile (UP) is determined by the equation:

$$UP(X)=\{\rho[E_i(X)]\}$$

where  $E_i(x)$  is the  $i^{\text{th}}$  element of the character trait of a real person  $X$ , and  $\rho[E_i(X)]$  is the probability of the person  $X$  having a specific character trait.

20 3. The method of claim 2 wherein, the element  $E_i$  is a binary element.

4. The method of claim 2 wherein, the element  $E_i$  is a multiple-outcome-element.

25 5. The method of claim 2 wherein, the step of iteratively integrating comprises iteratively integrating the collected selections with the statistical data and the psycho-demographic information in a cumulative fashion.

6. The method of claim 5 wherein, the collected selections data is disregarded after the integration step.

30 7. The method of claim 5 wherein, the step of inferring the profile (UP) is determined by the equation:

$$UP(X)=\{\epsilon_1, \epsilon_2, \epsilon_3, \dots, \epsilon_N\}$$

where  $\epsilon_i=\{(1/n) \sum_j E_{i,j} \tau_j \omega_j, \dots\}$ ,  $i$  identifies the elements,  $j$  identifies events being utilized by the person  $X$ ,  $E_{i,j}$  is the  $j^{\text{th}}$  event of the  $i^{\text{th}}$  element, providing information on the  $i^{\text{th}}$  element,  $\tau_j$  is the duration for which event  $j$  is being utilized, and  $\omega_j$  is a weighting function to give weight or take away weight for a given event and having a range from 0 to 1.

8. The method of claim 7 wherein,  $\omega_j$  is a function of one or more of the intensity of the event, the length of the event, the day of the week, and the time of the day.

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9. The method of claim 1 wherein, the user is a television viewer having a television receiver and the step of collecting comprises collecting data about the viewer's television program selections.

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10. The method of claim 9 wherein, the step of collecting comprises collecting data about television programs watched by the viewer.

11. The method of claim 9 wherein, the step of collecting comprises collecting data about television programs selected in an EPG.

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12. The method of claim 9 wherein, the step of collecting comprises collecting data about television programs scheduled for recording or watching in an EPG.

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13. The method of claim 9 wherein, the step of inferring the profile (UP) is determined by the equation:

$$UP(X)=\{\varepsilon_1, \varepsilon_2, \varepsilon_3, \dots, \varepsilon_N\}$$

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where  $\varepsilon_i=\{(l/n) \sum_j E_{i,j} \tau_j \omega_j, \dots\}$ , i identifies the elements, j identifies the television program being watched by the television viewer X,  $E_{i,j}$  is the  $j^{\text{th}}$  television program of the  $i^{\text{th}}$  element, providing information on the  $i^{\text{th}}$  element,  $\tau_j$  is the duration for which the television program j is being watched, and  $\omega_j$  is a weighting function to give weight or take away weight for a given television program and having a range from 0 to 1.

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14. The method of claim 9 further comprising the step of targeting information to the television viewer based on the profile.

15. The method of claim 14 wherein, the information is advertisement.

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16. The method of claim 15 wherein, the advertisement includes one or more of text, still images, and video.

17. The method of claim 14 wherein, the information is displayed simultaneously with  
an EPG on a display.

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18. The method of claim 1, further comprising the step of maintaining the profile in  
a secure file.

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19. The method of claim 9, further comprising the step of storing an EPG data base  
at the receiver, the EPG data base including time, channel, and program category identifiers of  
telecast television programs; and collecting step collects data about the program categories of  
telecast television programs selected by the viewer.

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20. The method of claim 1 wherein, the user is an Internet user having an Internet  
terminal for accessing the Internet and the step of collecting comprises collecting data about the  
user's website selections.

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21. The method of claim 20 wherein, the step of collecting comprises collecting data  
about websites visited by the user.

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22. The method of claim 21 wherein, the step of collecting comprises collecting data  
about products purchased the user from the visited website.

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23. The method of claim 20 wherein, the accessing the Internet is initiated from an  
EPG.

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24. The method of claim 20 wherein, the step of inferring the profile (UP) is  
determined by the equation:

$$UP(X)=\{\epsilon_1, \epsilon_2, \epsilon_3, \dots, \epsilon_N\}$$

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where  $\epsilon_i=\{(l/n) \sum_j E_{i,j} \tau_j \omega_j, \dots\}$ , i identifies the elements, j identifies the website being  
visited by the Internet user X,  $E_{i,j}$  is the  $j^{\text{th}}$  visited website of the  $i^{\text{th}}$  element, providing  
information on the  $i^{\text{th}}$  element,  $\tau_j$  is the duration for which the website j is being visited, and  $\omega_j$   
is a weighting function to give weight or take away weight for a given website and having a range  
from 0 to 1.

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25. The method of claim 20 further comprising the step of targeting information to  
the Internet user based on the profile.

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26. The method of claim 20 wherein, the information is advertisement.

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27. The method of claim 26 wherein, the advertisement includes one or more of text,  
still image, and video.

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28. The method of claim 20 wherein, the information is displayed simultaneously with  
an EPG on the Internet terminal.

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*Sub A2* 29. A method of inferring a preference profile of a user utilizing general populous  
statistical data and psycho-demographic information about the user, the profile having a plurality  
of unique characteristic segments, the method comprising the steps of:

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monitoring user selections

iteratively collecting data about the user selections with respect to each of the  
unique characteristic segments;

iteratively assigning probabilities to each of the collected unique characteristic  
segments;

integrating each of the collected unique characteristic segments with assigned  
probabilities derived from the general populous statistical data and with the psycho-demographic  
information about the user; and

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inferring the profile of the user from the integrated information.

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30. The method of claim 29 wherein, the step of inferring the profile (UP) is  
determined by the equation:

$$UP(X) = \{\rho[E_i(X)]\}$$

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where  $E_i(x)$  is the  $i$ th element of the character trait of a real person  $X$ , and  $\rho[E_i(X)]$  is  
the probability of the person  $X$  having a specific character trait.

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31. The method of claim 30 wherein, the step of inferring the profile (UP) is  
determined by the equation:

$$UP(X) = \{\epsilon_1, \epsilon_2, \epsilon_3, \dots, \epsilon_N\}$$

5 where  $\epsilon_i = \{(1/n) \sum_j E_{i,j} \tau_j \omega_j, \dots\}$ , i identifies the elements, j identifies events being utilized by the person X,  $E_{i,j}$  is the j<sup>th</sup> event of the i<sup>th</sup> element, providing information on the i<sup>th</sup> element,  $\tau_j$  is the duration for which event j is being utilized, and  $\omega_j$  is a weighting function to give weight or take away weight for a given event and having a range from 0 to 1.

10 32. The method of claim 31 wherein,  $w_i$  is defined as  $v/N$ , where v is the number selections present as alternatives when a selection is made, and N is the total number of selections available.

15 33. The method of claim 31 wherein, the user is a television viewer having a television receiver, the events are television programs being viewed by the viewer, and the step of collecting comprises collecting data about the viewer's television program selections.

34. The method of claim 31 wherein, the user is an Internet user having an Internet terminal for accessing the Internet, the events are websites being visited by the Internet user, and the step of collecting comprises collecting data about the user's website selections.

20 *Sub A37* 35. The method of claim 29 further comprising the steps of:  
recoding a predetermine number of inconsistencies of the user selections;  
separating the user profile into two consistent sets, a first user profile and a second user profile, while continuing collecting data for the user profile;  
monitoring the time-of-day for each collected data for the first and second user profiles;

25 inferring that the first user profile and the second user profile are for different individuals if over a predetermined period the time-of-day of the first user profile data is grouped together and the time-of-day of the second user profile data is grouped together.

30 36. The method of claim 29 further comprising the step of integrating external data with the collected data.

35 37. The method of claim 36 wherein, the external data is one or more of user provided information, feedback information, inherent information, and inferred information.

38. The method of claim 37 wherein, the user provided information includes user assignable weighting.

5 *Claim 39* 39. A system for inferring preference profile of a user utilizing general populous statistical data and psycho-demographic information about the user comprising:

a plurality of unique characteristic segments included in the profile;

means for monitoring user selections;

10 means for iteratively collecting data about the user selections with respect to each of the unique characteristic segments;

means for iteratively assigning probabilities to each of the collected unique characteristic segments;

15 means for integrating each of the collected unique characteristic segments with assigned probabilities derived from the general populous statistical data and with the psycho-demographic information about the user; and

means for inferring the profile of the user from the integrated information.

20 40. The system of claim 40 wherein, the means for integrating and the means for inferring is local to the user.

41. The system of claim 40 wherein, the means for integrating and the means for inferring is remote to the user.

25 *Claim 42* 42. The system of claim 40 wherein, means for inferring the profile (UP) is a microprocessor computing the equation:

$$UP(X)=\{\rho[E_i(X)]\}$$

where  $E_i(x)$  is the  $i^{th}$  element of the character trait of a real person  $X$ , and  $\rho[E_i(X)]$  is the probability of the person  $X$  having a specific character trait.

30 43. The system of claim 42 wherein, the means for inferring the profile (UP) is a microprocessor computing the equation:

$$UP(X)=\{\varepsilon_1, \varepsilon_2, \varepsilon_3, \dots, \varepsilon_N\}$$

35 where  $\varepsilon_i=\{(l/n) \sum_j E_{i,j} t_j w_j, \dots\}$ ,  $i$  identifies the elements,  $j$  identifies events being utilized by the person  $X$ ,  $E_{i,j}$  is the  $j^{th}$  event of the  $i^{th}$  element, providing information on the  $i^{th}$

element,  $\tau_j$  is the duration for which event  $j$  is being utilized, and  $\omega_j$  is a weighting function to give weight or take away weight for a given event and having a range from 0 to 1.

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44. The system of claim 43 wherein, the user is a television viewer having a television receiver, the events are television programs being viewed by the viewer, and the means for collecting comprises means for collecting data about the viewer's television program selections.

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45. The system of claim 43 wherein, the means for collecting comprises means for collecting data about television programs selected in an EPG.

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46. The system of claim 43 wherein, the user is an Internet user having an Internet terminal for accessing the Internet, the events are websites being visited by the Internet user, and the means for collecting comprises means for collecting data about the user's website selections.

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